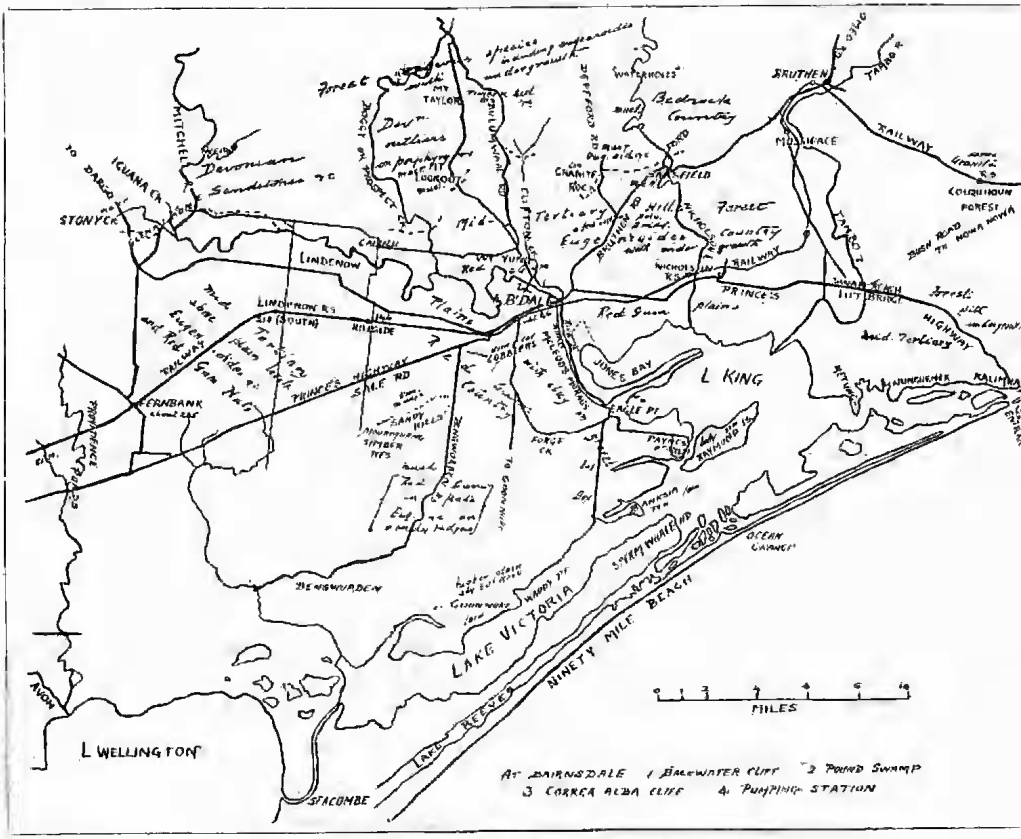
PLATE VIII.



MAP OF BAIRNSDALE DISTRICT.

BOTANICAL NOTES ABOUT BAIRNSDALE AND THE EASTERN LAKES.

BY T. S. HART, M.A., B.C.E.

(*Read before the Field Naturalists' Club of Victoria, 11th June, 1923.*)

To present the chief points of botanical interest in this district, and to avoid undue length, I propose to refer to the chief types of vegetation, and among individual species to those mainly which do not occur in the western parts of the State, to those not recorded in the "Key" as eastern, and to others about which there is some point of interest. Many of the far eastern Victorian plants do not reach as far west as this.

As a preliminary climatic note, the average rainfall is about 28 inches per annum at Bairnsdale (26 by another record), well distributed, but with the highest averages in September and January, according to the detailed information available over a part of the period of the records. The intervening months are sufficiently rainy to make the spring and early summer, by a small amount, the part of the year with highest rainfall. The lowest averages are in April and August, the dry April contrasting with Melbourne, indicating that the rains of that season do not readily penetrate so far to the east. A somewhat drier belt of country runs through Sale and Maffra, on the west. To the east the rainfall gradually increases, though there are relatively dry areas. In individual years the heaviest rain or dryness may occur in any month. In the native vegetation plants of dry situations must be able to stand summer droughts; in the valleys there is more luxuriant growth, due to all-the-year-round adequacy of moisture, and here eastern types are more abundant.

It may be noticed that the average rainfall is about that of Kew, but the number of rainy days appreciably less.

THE RED GUM PLAINS.—These are grass land with trees and little shrubbery, the prevalent eucalypt being the Forest Red Gum, *Eucalyptus terticornis*, with occasionally Swamp Gums, *E. ovata*, at wetter places, and subordinate Yellow Box, *E. melliodora*, and But-But, *E. Bridgesiana*, occasionally, and at places not typical the Gippsland Box, *E. Bosistoana*. The Erect Sheoke, *Casuarina suberosa*, is plentiful, but about Bairnsdale *C. stricta* is absent from the general run of the plains, being found further to the south and in two places on the edge of the steep fall to the river above Bairnsdale. As it is common at Sale and Maffra, we may conclude that the slightly greater rainfall is restricting it to drier situations, whereas in some of the drier country *C. suberosa* is seen to prefer the lower and moister position at the foot of a hill slope. Other trees are

Black Wattle, *Acacia mollissima*, and Lightwood, *Acacia implexa*; occasionally, *Banksia marginata*.

For the smaller plants a good locality is west of the Sale road crossing. Among the orchids are *Pterostylis falcata*, *Diuris punctata*, *Prasophyllum fuscum*, *Pterostylis curta*, *Eriochilus autumnalis*, and others. *Viola betonicifolia* is sometimes very fine, and apparently paler in the wetter situations. The Sundews are *Drosera peltata*. I have not seen *D. Whittakeri* here. *Bartlingia gracilis* occurs at a paddock on the Sale road, and quite deserves its specific name.

The plains being nearly flat, and with a clay subsoil, the water lies about in places. In the borrow pits of the railway and in other places we may see the curious *Philydrum lanuginosum*, the sole Victorian representative of a very small family of plants. At first I considered the possibility of its having been introduced, but, as it occurs in many natural swamps, well away from the railway and over a wide area, the idea may be dismissed. It may attain a height of five feet in a natural swamp, with as many as 150 buds on a slightly-branched inflorescence, but it usually opens only one or two of its yellow flowers on a stem or branch at once, and loses in showiness. *Damasonium australe* also occurs in pools on the plains and river flats; but its relative, Alisma, belongs to the river backwaters. *Goodenia paniculata* likes the moist places, and in the pools of an intermittent creek is the Large Marshwort, *Limnanthemum geminatum*.

Close south-west of Bairnsdale the plain is cut through by the steep-sided Cobbler's Gully. On the well-drained, sandy slopes are Manna Gums of the Brighton type, *E. viminalis*, and White Sallee, *E. coriacea*. Eagle Point Park, six miles down the river, may also be considered as a dissected edge of the plain. A bluff, rising steeply to 90 feet above the river, affords a fine view of the lake and more distant country. Behind is a hollow in which a small lagoon, used by stock, carries Azolla, Lemna, perhaps Wolffia, and Riccia, floating on its surface; among its fixed plants is a form of *Ranunculus rivularis*, probably variety *inundatus*. At another part, independent of this valley, is a salt marsh. The Swamp Paper-bark Tea-tree, *Melaleuca ericifolia*, on its margin carries *Cassytha phæolasia*, Long-spiked Dodder Laurel. The trees of the park are Red Gums, Manna Gum of the Brighton type, and a Box best placed as *E. Bosistoana*. Bursaria is abundant in good specimens. It is called Myrtle locally (whence the names Myrtle Point and Myrtle Gully in other parts of the district). Hymenanthera and *Kunzea pedunculatis* are other abundant shrubs. *Clematis glycinoides* is abundant; it is the common Clematis of the district. *Pterostylis concinna* and *Corysanthes*

pruinosa occur. The dryness of the surface soil of the hills is indicated by a succulent Claytonia and *Stellaria pungens*.

On the bluff are the furthest inland specimens of Coast Tea-tree, looking quite natural, but possibly introduced, as Tyers had a residence here. A Cassia, locally called "Glory Bush," is certainly a garden relic, and has contributed, no doubt, to many Bairnsdale gardens. *Senecio mikanioides* is also an escape, and should be watched lest it become a nuisance.

THE LOWER HILLS.—These are easily seen north and north-east of Bairnsdale, on the Bulumwaal and Bruthen roads. Being composed of the Tertiary sandstones and associated materials, they have a light, well-drained soil, affording a good root-run, and are well covered with trees and shrubbery, with smaller growth. White Stringybark, *Eucalyptus eugenioides*, is the prevalent species, with Red Box, *E. polyanthemos*, But-But, and some *E. goniocalyx*. Manuka, *Leptospermum scoparium*, and *Kunzea pedunculatis* are common. The latter, locally called Black Tea-tree, is acquiring a bad reputation for re-establishing itself on cleared lands and becoming rather a pest. Well grown, it is said to form good fishing rods. Here are also the close-flowered Geebung, *Persoonia confertiflora*, *Bossiæa microphylla*, *Hibbertia linearis*, *H. Billardieri*, and *Phyllanthus thymoides*. The curious little *Pomax umbellata*, with its coherent fruits, is a proved poison plant, yielding hydrocyanic acid; but its small size makes it unimportant. The Pinkeyes, though coming within the comprehensive *Tetratheca ericifolia*, are not typical for that species. *Clematis aristata* occurs, but it is not very abundant. Among orchids, the most interesting are *Chiloglottis diphylla* and *Corysanthes fimbriata*, both autumn or winter flowering.

The Red or Saw-leaved Honeysuckle appears at places in the *eugenioides* country, but it is especially characteristic of another and poorer variety of the light Tertiary soils. South-west of Bairnsdale, in sandy ridges, there occur, with this Banksia, Manna Gums of the Brighton type and Howitt's "*Eucalyptus amygdalina*, variety *c*," to which we may give the name "Sandhill Peppermint," with an undergrowth of Ricinocarpus, *Leptospermum myrsinoides*, *Acacia Oxycedrus* with *Leucopogon ericoides*, locally called Heather, *Correa speciosa*, of the red-flowered variety, and *Bossiæa heterophylla*, an autumn-flowering, broom-like Pea with few leaves. At one part *Caleya major* and *minor* both occur, the latter flowering early in December. This is very poor country; in some of it I have never seen stock. Kangaroo are sometimes seen. At the end towards Bairnsdale is a charcoal-burning plant using iron kilns. Yertchuk, *E. consideniana*, occurs, in part, at least, below the driest ground.

With this may be placed the country passed through on the railway west of Fernbank, on the rise from Providence Ponds. The Red Correa and the Heather can scarcely escape notice in the season; and in later spring the Crimson Bottlebrush, *Callistemon lanceolatus*, which is largely, but not all, in the flats. Such plants as *Astrotricha ledifolia*, *Grevillea floribunda*, are less easily recognized from the train. Besides these, *Brachyloma daphnoides* and *Acacia Mitchellii* are here, though not given as cast in the "Key," *Dampiera stricta* occurs. Here also is *Isopogon anemonifolius*, for which, I believe, this is the only recorded Victorian locality. *Drosera auriculata* occurs, contrasting with the *D. pellata* of the plains, which are wetter in spring. *Drosera spathulata* occurs at a drain, and Coral Fern has established itself at an ooze in a railway cutting.

A little west of Providence Ponds there is a patch of the Fairy Waxflower, *Eriostemon obovalis*, and about here also the Mealy Stringybark, *E. cinerea*, var. *multiflora*, is more common, and of the very blue form seen from Moe eastward. This is the tree which was formerly thought to be *E. pulverulenta*. Though this tree, as well as But-But, have separately been called *E. Stuartiana*, they were not regarded as the same tree. This is clear in Howitt's work, where "*Stuartiana*" is But-But; his later opinion that But-But is likely to be Baker's *E. Bridgesiana* is to be found in his appendix to Herman's report of the geology of Walhalla.

A noteworthy strip of country lies to the south-east of Lake Victoria. Some of its plants are those of the parts just mentioned. I have been able to visit it at Sperm Whale Head, opposite Paynesville, and behind Seacombe. At both these places, seventeen miles apart, there occurs *Thryptomene Miquelliana*, only known here in Victoria; it may occur outside and between these limits. At Sperm Whale Head it forms the principal undergrowth over considerable areas, sometimes with abundant *Calythrix tetragona*. In this district also *Astroloma pinifolium* is abundant, and *Calcya minor* was seen. Behind Seacombe, on the sandy hills, was *Acacia suaveolens*.

The low country bordering Lake Victoria, near Goon Nure, would also probably prove interesting, but I have only visited it in autumn. Some Grass-trees, presumably *Xanthorrhœa australis*, occur. *Banksia marginata* in the tree form is seen to like lower ground than *Banksia serrata*.

Raymond Island, opposite Paynesville, is another low area. While much of it is poor Manna Gum country, some of the flats carry Swamp Mahogany, *E. botryoides*, as well as Red Gum. It is worth notice that at Orbost the *botryoides* is not restricted to the flats.

Eastward from the Tambo River, on the road to Lakes' Entrance, the Narrow-leaved Geebung, *Persoonia linearis*, may be seen, and *Acacia discolor*, the Sunshine Wattle, flowering in early winter, becomes more common. The Dusky Coral Pea, *Kennedya rubicunda*, occurs in a valley.

On the shady cliffs about Kalimna we find *Olearia viscosa*, also the Blanket-tree, *Bedfordia salicina*, Musk, and others, as well as many of the characteristic valley plants of the district. Among the climbers we may mention *Celastrus australis*, with the conspicuous orange-yellow aril of the seeds showing in the open capsule about April; *Marsdenia rostrata*, the Stalked Doubah, with flowers of the peculiar asclepiad type and long fruit with hairy seeds; *Smilax australis*, sometimes sending out shoots in luxuriant growth leafless for some feet in length; and two other liliaceous climbers, *Geitonoplesium cymosum*, with deep purple berries, and *Eustrephus latifolius*, with yellow. Lillipillies, *Eugenia Smithii*, occur in a valley, and *Pittosporum undulatum* may be seen on the cliff.

These meet at the foot of the cliffs with marsh or coastal plants. The Boobialla, which is common, is, however, a valley as well as a coastal plant in this district.

I have not collected *Acronychia lævis*, but Mr. D. Paton tells me that it is at Kalimna.

Near Nungurner there is the eucalypt sometimes called *E. Maidenii*, sometimes *E. St. Johnii*. Howitt gives a locality near Kalimna for his "*E. amygdalina*, variety *c*," which Baker makes *E. radiata*. Elegant examples may be seen also near the road bridge over Boggy Creek, at Nowa Nowa.

Chiloglottis trapeziforme occurs near the foot of a cliff near Paynesville.

THE COASTAL HUMMOCKS.—Many of the common coastal species occur. We may note also *Scævola suaveolens*, the Scented Fan-flower, with fine purple berries in autumn; *Senecio spathulatus*, Spoon Senecio, often as isolated plants or near the outer edge of the vegetation; and *Stackhousia spathulata*. The broad-leaved form of the Mistletoe, *Loranthus celastroides*, occurs on *Banksia integrifolia* and on Sea Box, Gynopogon (Alyxia). This is the original *celastroides*, the common variety being the *eucalyptifolius* form included in this species.

The berries on several of the plants are a feature of the coastal scrub in autumn; they indicate birds as seed distributors. On the other hand, *Cakile maritima*, growing at the line of rubbish on the inner shore, suggests water-carried seeds. The fruits will float. Among other plants, *Tetragonia expansa*, New Zealand Spinach, occurs on the inner side of the Hummocks and at many suitable places about the Lakes.

WET-SITUATIONS—SALT MARSHES.—The wet situations vary

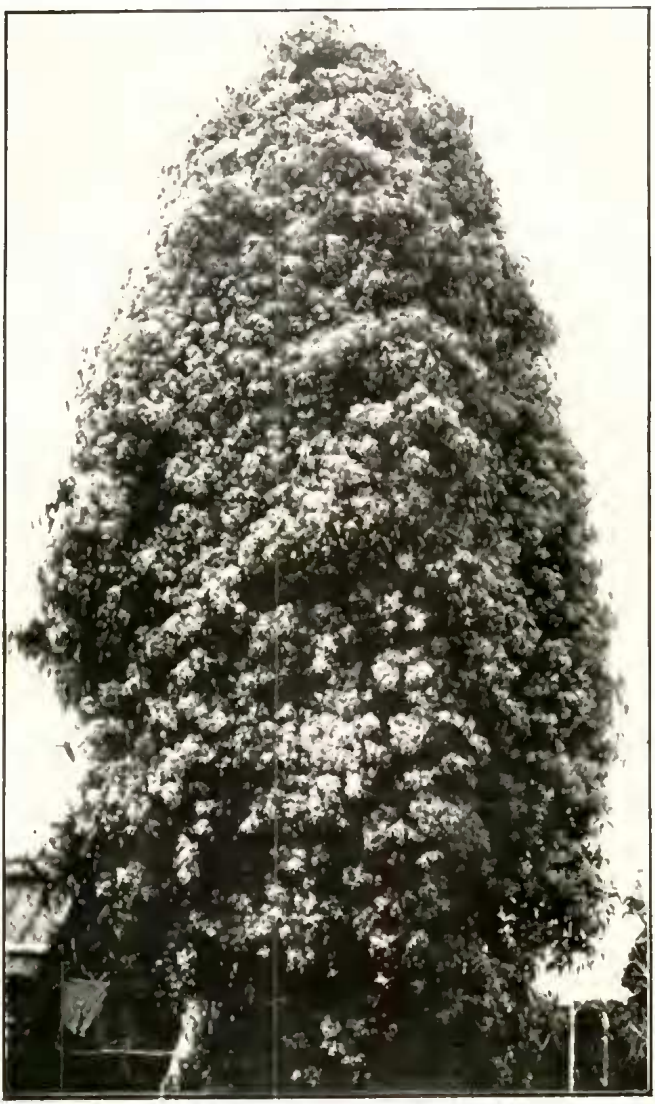
in depth, duration, and quality of the water. Beginning with the salt marshes, the Swamp Paper-bark appears, from the Baron's statements, to be able to stand water about half as salt as sea water, but it is not clear for how long. Near Lakes Entrance it has died off considerably; this is commonly attributed to the permanent open entrance, which would, no doubt, increase the saltness and maintain it. Suæda, Salicornia, *Juncus maritimus*, *Samolus repens*, and others occur at the west end of the Lakes' Entrance township. I have even seen *Mimulus repens* in flower temporarily under tidal waters; possibly some ground had slipped to a lower position. On Jones's Bay, at East Bairnsdale, Salicornia occupies the lowest ground; slightly higher, but still very low, the Rounded Pigface, *Mesembrianthemum australe*, grows in such quantity that acres of a blaze of pink are seen from miles away in the flowering season. *Selliera radicans*, a small Triglochin, *Cotula coronopifolia*, and *C. reptans* occur. There is a very small Cotula flowering on a single stem, with few leaves, but it may be merely precocious flowering of seedling *coronopifolia*.

A small Plantago and the grass *Distichlis spicata* also occur in salty ground.

In a salt marsh near Waddy Point, Lake Victoria, *Sebæa albidiflora* occurs; it is not given as east in the Key, and the place has had communications with Footscray, but it is probably native. I do not know whether it occurs at Footscray.

A different type of wet place is found in M'Leod's Morass, just south of Bairnsdale township. Having only a small connection to the river, and only to the open lake through five miles of river, and receiving the drainage of some twenty-five square miles of country, it is not so salt as Jones's Bay, and is also liable to long-continued flooding. It has, however, considerable soluble salts, in part magnesian, which come out as an efflorescence on the soil in dry weather. Some of the springs at its edge are salty with common salt. The lower parts carry a dense growth of tall rushes, apparently *Juncus pallidus*, reaching, on the edge of the made channel, to eleven feet in height—often six. In these are roosting-places of innumerable Starlings. The mineral basis of the soil being sticky in the lower parts, it is quite possible that grazing when wet may have caused serious deterioration. Mesembrianthemum and Salicornia are absent, though many salt marsh plants occur. *Hydrocotyle vulgaris* and two other species of this genus—probably *H. pterocarpa* and *H. tripartita*—occur. *Calystegia sepium*, the larger Bindweed, grows over the rushes. Melaleuca occurs at the far edge, but not in the rush beds. Spurry, *Spergula arvensis*, is abundant, a plant of good repute for

PLATE IX.



CLEMATIS GLYCINOIDES, De C.
Growing over a dead tree at Lake Bunga.

Photo. BULMER, Bairnsdale.

sheep, but regarded as an indicator of bad soil condition in cultivation; it is not native.

At the sulphur springs in the Clifton Morass *Phragmites communis*, *Scirpus lacustris*, and others were found with freshly-deposited sulphur about them. On the Nicholson flats there are at places acid waters from decomposing marcasite. The drains are at places bare, but the Bulrush, *Typha angustifolia*, is one of the first plants to appear as the drains are followed down. The flats are, of course, good soil apart from these acid waters at spots.

South-west of Bairnsdale, and in parts of the sandy country, as near Fernbank, there are numerous swampy areas, carrying mainly Lepidosperma, sp.; Philydrum, already mentioned, grows in these.

THE LIMESTONE CLIFFS.—Opposite Bairnsdale a limestone cliff faces south on the Backwater. It carries a dense growth of Rapanea (Myrsine), Boobialla, Bursaria, Pomaderris, Hymenanthera, &c., in which the difficulty of penetration is increased by occasional Boxthorn and Hawthorn. Creepers are also abundant—*Clematis glycinoides*, *Marsdenia rostrata*, Eustrephus, and Geitonoplesium—and at the water's edge an occasional garden Honeysuckle. The nettles are tall, and hang among the bushes near face level. *Pimelea axiflora* is plentiful. On the nearly opposite, bare, sunny cliff at Pound Swamp, *Pimelea glauca*, a common Keilor Plains species, occurs, but no *axiflora*—now, at least. *Marsdenia flavescens*, the Yellow Doubah, occurs here, but I am not sure of its requirements as to habitat. A few plants of Celastrus survive. *Plectranthus parviflorus* and *Enchylæna tomentosa* also occur.

A little higher up-stream a cliff on the north side, with a south-westerly aspect, carries an abundance of *Correa alba*, the White Correa. I have not noticed this coastal plant on the Hummocks at this coast, but a limestone cliff is a dry situation. Boobialla and Coast Honeysuckle occur here, and the three are found also further up-stream. *Scævola microcarpa* grows on this cliff and, on one at the Nicholson, also limestone. *Cynoglossum australe* occurs on the lower slopes freely. (The Scævola is just below the chief crags, but the soil is no doubt calcareous.)

THE MAIN VALLEYS.—The flats are mostly cleared, and largely used for maize and for grazing, but remnants of the valley vegetation may be seen. The first Kanookas, *Tristania laurina*, occur on the Mitchell near the pumping station, at the west end of the township; further up they are more common. *Callistemon paludosus* occurs, and pink and cream flowers may be seen on the same plant. Examination showed on one such that the flowers opened pink and faded. Prospect

Creek comes in from the north a few miles up; it is commonly called "Boggy Creek," and care must be taken to distinguish Boggy Creek at Nowa Nowa. A mile up this creek the valley carries Kanookas, *Lomatia longifolia*, *Baeckea virgata*, a green-flowered *Correa speciosa*, and *Prostanthera rotundifolia*, Round-leaved Mint-bush. *Cyclophorus* (*Polypodium*) *serpens* and *Hymenophyllum tunbridgense* are abundant, and other ferns occur under the shade of a cliff and trees.

Higher up this valley is of more ordinary character, but *Howittia trilocularis*, Shrub Mallow, *Callistemon lanceolatus*, Crimson Bottlebrush, *Acacia verniciflua*, Varnish Wattle, and *Lasiopetalum dasyphyllum*, with its curious flowers and handsome foliage, may be found.

At Glenaladale the Mitchell issues from its gorge and into the same flat come Iguana Creek and Stony or Moitun Creek. On the Mitchell above Glenaladale, Currajongs, *Brachychiton populneus*, may be seen. In the lowest gorge of Iguana Creek a clear stream runs over the Devonian sandstones. The lowest ground carries Lillipillies, *Eugenia Smithii*, Kanooka, *Tristania*, *Pittosporum undulatum*, Elæocarpus, &c. The Pittosporums are also seen perched on the cliffs.

On the other side of Bairnsdale we have, at Sarsfield, the Nicholson issuing from the hills through a steep-sided valley in bedrock. A path leads along the west bank from above the last house near the old ford used by M'Millan in 1840. We may notice *Leptospermum attenuatum*, Slender Tea-tree, as a very graceful element in the valley vegetation. *L. flavescens* is at the water's edge. *Phebalium squamulosum*, Scaly Phebalium, is abundant. A few plants of *Eriostemon trachyphyllus* occur; *Pomaderris betulina* occurs. *Micrantheum hexandrum*, *Phyllanthus Gunnii*, and *Beyeria lasiocarpa*, of the Euphorbia family. The Wonga Vine, *Tecoma australis*, is added to the other climbers. There are no Pittosporums; the local resident using this name refers to Rapanea. Kanookas occur abundantly, and others already mentioned. A little higher up the valley Calythrix is abundant among rocks, and *Pomaderris phylicifolia* also appears.

On the river at Bairnsdale we are not above tidal influences, and the water is salty, especially when the river is low. Silver and Black Wattles and Blackwoods, *Callistemon paludosus* and *Leptospermum lanigerum*, and rarely *flavescens*, occur. The Callistemon I have not noticed below the wharf, but the Woolly Tea-tree extends a long way down. The riverside gums at Bairnsdale are Red Gum, *E. tereticornis*, Gippsland Box, *E. Bosistoana*, Manna Gum, and Swamp Gum, *E. ovata*. Of these the Red Gum extends to the mouth of the river; some trees carry shorter and stouter buds—possibly a salt effect.

The Common Reed, Phragmites, is worth a note as a most valuable plant for breaking the wash from the river steamers and protecting the banks both by its roots and its mass of stems. It needs to be tied down to establish it. An earlier protection is made by wire-netting with Boxthorn thrown in behind it. Soundings in the Backwater gave seven feet of water just outside the Reeds.

"The Backwater" (Bairnsdale), which is open to the river below and receives the waters of Clifton Creek, carries in the water *Cladium articulatum* and *C. jamaicense* (Mariscus), Club-rushes, *Scirpus lacustris*, and occasionally *maritimus*, the Bulrush, *Typha angustifolia*, and Phragmites. In Clifton Creek the boat's progress is eventually arrested by Triglochin, Vallisneria, and other plants.

The Pound Swamp, a permanent billabong disconnected from the river in ordinary flow, situated a short distance up the Mitchell flats on the town side, presents a banded appearance in the water vegetation, the species being mixed, but different ones predominating in successive zones. Care is necessary, as the water near the cliff deepens somewhat rapidly, and the bottom is irregular from limestone blocks. At the edge *Scirpus lacustris* occurs, with patches of *Alisma plantago*. Further out are *Triglochin procera* and *Jussieua repens*, with partly floating habit. *Heleocharis sphacelata* is in patches. *Myriophyllum elatinoides*, in part mixed with the Jussieua and Triglochin, predominates after these cease; Vallisneria, also occurring in shallower waters, is seen outside this Coarse Water-Milfoil. Beyond I thought to be clear water, but in the spring of 1922 abundant flowers of a Potamogeton appeared. Obtaining some by spearing with a rod, hook, and line, I determined it as *P. ochreatus* (*P. obtusifolius*). A piece reached a length of 9 feet 3 inches, but the depth of water was not ascertained. In April, 1923, the water being very low, on a still day I was able to see clearly this Potamogeton still well submerged. (Since this was written I have obtained Ceratophyllum here, probably growing near *P. ochreatus*.)

The orchid *Dendrobium striolatum* was found freely at one place on rocks on and below a steep, shady cliff. The epiphytic orchid, *Sarcochilus parviflorus*, was also noticed on trees, in one valley only, in good shade.

Jussieua is sometimes found at the water's edge out of water, and is creeping as well as floating. It sometimes, at least, shows white outgrowths, best regarded as related to aeration. It is possibly significant that the best examples I found were in a somewhat polluted water, but a seasonal effect may be involved: they were found in late summer.

I have referred little to the hills of older rocks to the north,

which I have not so much examined. The country north of the Tertiary area is still forest, with undergrowth, and *E. eugenioides* and other species continue. *E. macrorrhyncha*, Red Stringybark, appears on all the older formations—Ordovician bedrock, granitic rocks, and Devonian. Howitt's "*E. amygdalina*, var. *a*," common form, appears; it also is rare—if it occurs at all—on the Tertiaries.

A patch of Yellow Stringybark, *E. Muelleriana*, occurs on and about Mount Lookout on Devonian and porphyritic rocks. Another patch occurs in bedrock country near Water-holes on the Nicholson, but whether actually on bedrock or alluvial I did not ascertain. Near Orbost the Yellow Stringybark occurs on what appears to be ordinary Tertiary country. Messmate, *E. obliqua*, is not common near Bairnsdale; a patch occurs just north of Bulumwaal with *E. cinerea*, var. *multiflora*. The Red Ironbark, *E. sideroxylon*, occurs on the Tertiaries as well as the older formations, though sometimes they begin at the change of the formation, and the same applies to Golden Wattle. Ironbarks reach to close to the sea cliff east of Lakes' Entrance. There is no *E. leucoxylon* in the limited sense; if the name "White Ironbark" should be heard applied to an East Gippsland tree it will probably mean *E. Sieberiana*. Hickory Wattle, *Acacia penninervis*, occurs mostly on bedrock country, but there is a patch on Tertiaries near the Moormurng Timber Reserve. *Hakea orianthа* belongs to the older formations, and a very prickly Leucopogon occurs on bedrock country. On Granite Rock, about seven miles N.N.E. of Bairnsdale, I found *Isotoma axillaris*, a fine, showy species, worth cultivation, but intensely acrid. *Rubus rosifolius* occurs on Mount Lookout, agreeing closely with Howitt's west limit for it on Mount Taylor. It very likely will occur in the lower country as well. In fact, there is ample evidence generally to show that care is necessary in stating the preferences of any of the rarer plants.

The map shows the positions of the various places referred to, but does not claim to show the creeks and crooked roads exactly. Obvious abbreviations indicate localities for various eucalypts, not necessarily the prevalent species. The dotted line indicates roughly the position where the older rock-formations are met with. The phrase "*eugenioides* country" needs interpreting as above; there is plenty of *eugenioides* further north.

LOCAL HANDBOOKS.—We are pleased to learn that the Tasmanian Government has recently published two handbooks dealing with the shells of that State, and hope to have an opportunity of giving an extended notice of them in these pages at an early date.